

FEB 14 2001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Hans Heinrich Heidtmann, et al.

Serial No.: 09/256,237

Filing Date: February 24, 1999

For: **NUCLEIC ACID CONSTRUCT FOR EXPRESSING ACTIVE
SUBSTANCES WHICH CAN BE ACTIVATED BY PROTEASES AND
PREPARATION AND USE**

WITHDRAWAL AS ATTORNEY OF RECORD

Commissioner for Patents
Washington, DC 20231

Sir:

Effective immediately, the following Foley & Lardner attorneys withdraw as

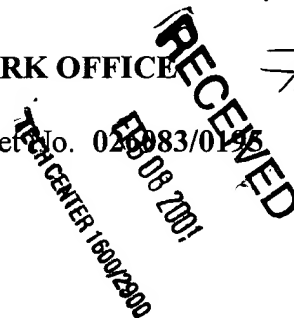
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LYLE K. KIMMS	Reg. No. 34,079
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SYBIL MELOY	Reg. No. 22,749
RICHARD C. PEET	Reg. No. 35,792
GEORGE E. QUILLIN	Reg. No. 32,792
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CHARLES F. SCHILL	Reg. No. 27,590
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APPROVED

William J. Lardner
SPE, TC 1600
2/14/01

Attorney Docket No. 020983/0135



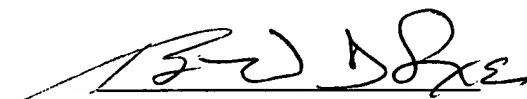
The undersigned is signing this withdrawal form on behalf of himself and all the aforementioned attorneys.

All further correspondence should be sent to:

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Respectfully submitted,

Date: Feb. 5, 2001



Bernhard D. Saxe
Reg. No. 28,665

FOLEY & LARDNER
3000 K Street, N.W., Suite 500
Washington, D.C. 20007-5109
(202) 672-5300



Entrez
Protein

Search for

as

☐ 1: NP_000495 coagulation factor X precursor; Prothrombinase [Homo sapiens]

BLink, PubMed, Related Sequences, Nucleotide, Taxonomy, OMIM, L

EXHIBIT A

LOCUS NP_000495 488 aa PRI 31-OCT-2000
 DEFINITION coagulation factor X precursor; Prothrombinase [Homo sapiens].
 ACCESSION NP_000495
 PID g4503625
 VERSION NP_000495.1 GI:4503625
 DBSOURCE REFSEQ: accession NM_000504.2
 KEYWORDS .
 SOURCE human.
 ORGANISM Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

REFERENCE 1 (residues 1 to 488)
 AUTHORS Gilgenkrantz, S., Briquel, M.E., Andre, E., Alexandre, P., Jalbert, P., Le Marec, B., Pouzol, P. and Pommereuil, M.
 TITLE Structural genes of coagulation factors VII and X located on 13q34
 JOURNAL Ann. Genet. 29 (1), 32-35 (1986)
 MEDLINE 86240676
 PUBMED 3487272

REFERENCE 2 (residues 1 to 488)
 AUTHORS Leytus, S.P., Foster, D.C., Kurachi, K. and Davie, E.W.
 TITLE Gene for human factor X: a blood coagulation factor whose gene organization is essentially identical with that of factor IX and protein C
 JOURNAL Biochemistry 25 (18), 5098-5102 (1986)
 MEDLINE 87026600
 PUBMED 3768336

REFERENCE 3 (residues 1 to 488)
 AUTHORS Kaul, R.K., Hildebrand, B., Roberts, S. and Jagadeeswaran, P.
 TITLE Isolation and characterization of human blood-coagulation factor X cDNA
 JOURNAL Gene 41 (2-3), 311-314 (1986)
 MEDLINE 86221713
 PUBMED 3011603

REFERENCE 4 (residues 1 to 488)
 AUTHORS Messier, T.L., Pittman, D.D., Long, G.L., Kaufman, R.J. and Church, W.R.
 TITLE Cloning and expression in COS-1 cells of a full-length cDNA encoding human coagulation factor X
 JOURNAL Gene 99 (2), 291-294 (1991)
 MEDLINE 91216473
 PUBMED 1902434

REFERENCE 5 (residues 1 to 488)
 AUTHORS Marchetti, G., Castaman, G., Pinotti, M., Lunghi, B., Di Iasio, M.G., Ruggieri, M., Rodeghiero, F. and Bernardi, F.
 TITLE Molecular bases of CRM+ factor X deficiency: a frequent mutation (Ser334Pro) in the catalytic domain and a substitution (Glu102Lys) in the second EGF-like domain.
 JOURNAL Br. J. Haematol. 90 (4), 910-915 (1995)
 MEDLINE 95399290
 PUBMED 7669671

REFERENCE 6 (residues 1 to 488)
 AUTHORS Cooper, D.N., Millar, D.S., Wacey, A., Pemberton, S. and Tuddenham, E.G.
 TITLE Inherited factor X deficiency: molecular genetics and

pathophysiology
JOURNAL Thromb. Haemost. 78 (1), 161-172 (1997)
MEDLINE 97341947
PUBMED 9198147
REFERENCE 7 (residues 1 to 488)
AUTHORS Kamata,K., Kawamoto,H., Honma,T., Iwama,T. and Kim,S.H.
TITLE Structural basis for chemical inhibition of human blood coagulation factor Xa
JOURNAL Proc. Natl. Acad. Sci. U.S.A. 95 (12), 6630-6635 (1998)
MEDLINE 98283982
PUBMED 9618463
REFERENCE 8 (residues 1 to 488)
AUTHORS Millar,D.S., Elliston,L., Deex,P., Krawczak,M., Wacey,A.I., Reynaud,J., Nieuwenhuis,H.K., Bolton-Maggs,P., Mannucci,P.M., Reverter,J.C., Cachia,P., Pasi,K.J., Layton,D.M. and Cooper,D.N.
TITLE Molecular analysis of the genotype-phenotype relationship in factor X deficiency
JOURNAL Hum. Genet. 106 (2), 249-257 (2000)
MEDLINE 20208357
PUBMED 10746568
COMMENT REVIEWED REFSEQ: This record has been curated by NCBI staff. The reference sequence was derived from [L29433.1](#), [L00390.1](#).
Summary: This gene encodes the vitamin K-dependent coagulation factor X precursor of the blood coagulation cascade. This factor precursor is converted to a mature two-chain form by the excision of the tripeptide RKR. Two chains of the factor are held together by 1 or more disulfide bonds; the light chain contains 2 EGF-like domains, while the heavy chain contains the catalytic domain which is structurally homologous to those of the other hemostatic serine proteases. The mature factor is activated by the cleavage of the activation peptide by factor IXa (in the intrinsic pathway), or by factor VIIa (in the extrinsic pathway). The activated factor then converts prothrombin to thrombin in the presence of factor Va, Ca²⁺, and phospholipid during blood clotting. Mutations of this gene result in factor X deficiency, a hemorrhagic condition of variable severity.

FEATURES

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mat_peptide	183..488
Region	/product="coagulation factor X heavy chain" 183..234

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241 ckdgecpwqa llineenegf cggtilsefy iltaahclyq akrfkvrvgd rnteqeegge
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421 gphvtrfkdt yfvtgivswg egcarkgkyg iytkvtaflk widrsmktrg lpkakshape
481 vitssplk
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